WHAT IS CLAIMED IS:

1.   An optical module comprising:

an optical waveguide;

5   an optical element having an optical section;

a semiconductor chip electrically connected to the optical element;

a substrate having a first surface and a second surface, the substrate supporting the semiconductor chip and the optical element on the first surface;

10   an interconnect pattern formed on the first surface, the interconnect pattern electrically connected to the semiconductor chip; and

external terminals provided over the second surface, the external terminals electrically connected to the interconnect pattern.

15   2.   The optical module as defined in claim 1, wherein the substrate has through holes formed therein to electrically connect the external terminals to the interconnect pattern.

3.   The optical module as defined in claim 1, wherein the optical

20   element and the semiconductor chip are packaged.

4.   The optical module as defined in claim 3, wherein the semiconductor chip and the optical element are sealed with resin.

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5. The optical module as defined in claim 1,

wherein the semiconductor chip and the substrate respectively having first and second holes formed therein and overlapped with each other;

5 wherein the optical waveguide is inserted into the first and second holes; and

wherein the optical element is disposed so that the optical section and one end surface of the inserted optical waveguide are opposed.

10 6. The optical module as defined in claim 1, further comprising a transparent underfill material provided between the optical element and the semiconductor chip so as to cover the optical section.

7. The optical module as defined in claim 1, wherein the semiconductor 15 chip has an internal circuit for driving the optical element.

8. The optical module as defined in claim 1, wherein the optical element and the semiconductor chip are stacked.

20 9. The optical module as defined in claim 1, wherein the interconnect pattern electrically is connected to the optical element.